Urinary Tract Infection in Children
Understanding the urinary tract
The body gets rid of waste products through the urinary system. There are two kidneys, one on each side, in the abdomen. They make urine, which drains down the ureters into the bladder. Urine is stored in the bladder and is passed out through the urethra from time to time.

What is an infection of the urinary tract?
Urinary infection is caused by bacteria (germs) that get into the urine. Most urine infections are due to bacteria that normally live in your own bowel without causing any harm. Some of these lies around the anus. These bacteria can sometimes travel to the urethra and into the bladder and multiply quickly to cause infection. The infection may be in the bladder (‘cystitis’), but may travel higher up to also affect one or both kidneys and is then called pyelonephritis.

What are the symptoms of a urinary infection?
Young children and babies can have various symptoms, which may include

- Fever with no obvious focus of infection
- Vomiting and/or diarrhea
- Drowsiness
- Excessive crying, refusal of feeds and generally unwell
- Stomach pain

Older children may have pain on one side of the abdomen, pain when they pass urine, and may pass urine frequently. Bedwetting in a previously ‘dry’ child is sometimes due to a urinary infection.

How is a urine infection confirmed?
A urine infection is confirmed if bacteria are found on testing a urine sample for urine culture. The sample of urine to be tested has to be collected with care; It should not come into contact with skin or other materials that may contaminate it with bacteria. The ‘clean catch’ urine sample is collected midstream.

Urine specimens in young children
It is not easy to get a pure midstream urine sample in young children and babies. The usual way is to catch some urine in the specimen bottle whilst in ‘full flow’. Just be ready with the open bottle as the child passes urine. (Be careful not to touch the open rim of the bottle with your fingers as this may contaminate the specimen with bacteria from your fingers.) In some cases, the doctor may like to take the sample directly from the bladder with a syringe (Suprapubic aspiration).

How is a Urinary infection treated?
Antibiotics usually clear the infection. It is important to follow your doctor’s instructions about the antibiotic that has been prescribed for your child. Diagnosing urinary tract problems in children can make a big difference. Appropriate treatment may prevent kidney damage, which might cause high blood pressure or kidney failure later in life. Management does not end with treatment alone but includes evaluation of urinary tract to detect bladder or kidney problems with the help of some special tests and use of prophylactic antibiotics in some cases.

General information:

Constipation
If your bowel movements are irregular, this needs to be brought to your doctor’s attention. Constipation is a risk factor for urinary infection.

Urination Habits
Sometimes children are in a hurry when they go to the toilet to empty their bladder because they want to get back to play. Any urine left in
the bladder is a good place for bacteria to grow and may cause another infection. So children should take their time and relax while emptying the bladder.

Some people tend to hold urine in their bladders for extended periods of time because they do not want to use a toilet in an unfamiliar place. This can promote the growth of bacteria. Children prone to urinary infection should urinate every 3-4 hours while awake. Children should be encouraged to empty their bladder frequently and completely.

**Information on procedures**

**Clean-catch MSU: Adult Assisting a Child**

1. Wash your hands well with soap and water.

2. Remove the lid from the specimen cup and place it flat side down, within reach of the toilet. Make sure you don’t touch the inside of the lid or cup.

3. Help your child sit on the toilet and spread her legs apart.

4. In case of a female child, using the fingers of one hand, gently separate her labia (the folds of skin around the opening where the urine comes out). Keep the labia separated for the rest of the procedure. In case of a male child, gently grasp the child’s penis and pull back his foreskin if he is uncircumcised. Wash the area with soap and water. Rinse well.

5. While still holding the labia apart or pulling back the foreskin, ask your child to urinate into the toilet.

6. After she has urinated a small amount, position the cup under the stream. Try not to touch the cup’s rim to her skin. Take the cup away when it’s about 1/3 full, and let her finish urinating.

7. Place the lid tightly on the urine specimen container. Remember not to touch the inside of the cup or lid with your fingers. If uncircumcised, pull the foreskin forward after the child has finished urinating.

8. If taking a sample at the hospital, help your child dress and wash both your and her hands. Deliver sample to lab along with requisition form.

9. If taking a sample at home, the sample may be refrigerated but must be taken to the lab in less than 2 hours from time of the collection.

**Micturating Cystourethrogram**

You are going to have some special x-rays done so we thought we’d let you know what’s going on. This test is done in the radiology department.

After you have emptied your bladder in the toilet, you will be taken into a large room where you will see a big machine, an overgrown camera, over a high metal table. The camera is hooked up to a TV screen where your doctor and parents can see your bladder.

The technologist will ask you to remove your pants, climb onto the table and lie down on your back. The doctor will wear rubber gloves. He will wash your penis very carefully with pieces of cotton dipped in liquid soap. This is to make the area super clean, so you must not touch it until the test is over.

The doctor will put a clean sheet over you. The test is a real quickie, so the more you relax, the easier it will be. Then the doctor will squirt a jelly into your penis in boys or around the urethra in girls so that the next step does not hurt. After a few minutes he will gently slide a catheter into the penis or urethra. Using a syringe he will then inject a liquid (contrast) through the tube, into the bladder. You will be able to see the bladder fill up on the TV screen. As the bladder fills you will feel like you have to pass urine, but you must hold for a few seconds while the doctor takes a couple of pictures. Then the technologist will give you a container to void in, while you are still lying on the table; as you are doing this the plastic tube will slide out and the doctor will take a few more pictures. When the pictures are being taken you must lie very still or they will be blurred. Once all the pictures are taken the technologist will help wipe off any extra contrast dye and you can get dressed.

If it stings/burns the next couple of times that you pass urine, don't worry, it will go away very soon.

However report to the doctor if fever occurs after procedure
Other tests:
Special tests are done to evaluate the urinary tract like ultrasonography, micturating cystourethrogram, and nuclear scans, especially for children under 5 years, as some children with a urine infection have a problem with their bladder or kidneys.

Renal ultrasound:
This is done to look at the size and growth of the Kidneys. It also gives information on the anatomy of the urinary tract.

Micturating cystourethrogram (MCU):
This is a procedure done with the help of x-rays and a dye is injected through a tube placed in the urethra. This helps us to detect back flow of urine into the kidneys or any block in the urinary tract.

Nuclear scans:

DMSA:
This is done to look for scars in the kidney that could occur with a urinary tract infection. It also helps to detect the degree of function of the kidneys.

DRCG:
This test is done to screen for backflow of urine into kidneys.

DTPA SCAN:
This test is done to rule out obstruction in the urinary tract.

Points to remember!
- Fever with no obvious focus of infection may turn out to be urinary infection in young children.
- Using diapers should not precipitate urinary infections.
- Washing of perineal area should be from front to back direction.
- Circumcision may help some children with repeated urinary infections
- Please seek help if your child has an abnormal or poor stream of urine
- Avoid constipation and holding urine for long hours
- Try to keep all irritants (eg oils, shampoo) from coming into contact with the bottom (perineal area).
- Pinworms may act as irritants and may make the area itchy.
- Drink plenty of fluids.
- Empty the bladder often.

For emergencies contact:
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